

DRAWER SAFETY LATCH

Background

The present invention relates to a drawer safety latch. More particularly, it
5 relates to a drawer safety latch which can be installed very easily and operates simply.
There are many known types of drawer safety latches, but they usually are difficult to
install, difficult to operate, and typically only operate in one direction, to prevent a child
from opening the drawer. In many cases, the latch permits the child to open the drawer
enough to get his fingers into the drawer, and then permits the child to close the drawer
10 on his fingers, which can result in injury to the child.

Summary

The safety latch of the present invention may be placed so that the drawer opens just far enough for the user to be able to disengage the safety latch, but not enough to gain access to the contents of the drawer until the safety latch is disengaged. Once the
5 drawer is opened far enough to engage the safety latch, the safety latch prevents the accidental closure of the drawer. In order to close the drawer, the user must intentionally disengage it. This prevents a child from closing the drawer on his fingers.

A preferred embodiment of the safety latch is very easy to install. It includes an adhesive strip and can be mounted quickly and easily to the drawer without the need for
10 drilling or screws.

Brief Description of the Drawings

Figure 1 is a perspective view of a cabinet with a drawer safety latch made in accordance with the present invention;

Figure 2 is a perspective view of the drawer safety latch of Figure 1;

5 Figure 3 is a view along line 3 – 3 of Figure 1;

Figure 4 is a plan view of the drawer safety latch of Figure 2;

Figure 5 is a view along 5 - 5 of Figure 4;

Figure 6 is a view along 6 - 6 of Figure 5;

Figure 7 is the same as Figure 3, but with the drawer opened beyond the detent
10 of the safety latch; and

Figure 8 is the same as Figure 7, but with the drawer closed beyond the detent of the safety latch.

Description of the preferred embodiment

Figures 1 – 8 show a drawer safety latch 10 made in accordance with the present invention. Referring to Figures 2, 4, 5, and 6, the safety latch 10 is a substantially “L” shaped body (seen best in Figure 6), including a vertical leg 12, a horizontal leg 36 projecting inwardly from said vertical leg 12, and an engaging arm 20 projecting forward from said horizontal leg 36.

The vertical leg 12 has an inside face 14, a flat outside face 16, and a top surface 18. In this embodiment 10, there is an adhesive strip adhered to the outside face 16, including a peel-off protective sheet 24, which covers the adhesive strip until the user is ready to install the safety latch 10 in the drawer 22, at which time he peels off the protective sheet 24 to expose the adhesive surface in order to adhere the vertical leg 12 to the side of the drawer 22.

The engaging arm 20 has a top surface including front and rear ramps 26, 28, which are collinear, and a trough 30 between the two ramps 26, 28. As is explained in more detail later, the trough 30 has a depth which permits it to engage the front face of the cabinet 34 (see Fig. 3). The top surface of the front ramp 26 tapers from a lower elevation in front to a higher elevation in back, where it meets the trough 30. The top surface of the rear ramp 28 tapers from a higher elevation in front, where it meets the trough 30, to a lower elevation in back.

The engaging arm 20 is cantilevered from the horizontal leg 36, and pivots upwardly and downwardly parallel to the vertical leg 12 by means of flexing of the latch

material between the engaging arm 20 and the horizontal leg 36. The engaging arm 20 may be deflected by pushing it down until the apex 38 of the second ramp 28 is below the cross bar 32, allowing the drawer to open. The engaging arm 20 is naturally biased to spring back up when it is not being deflected downwardly.

5 As seen in Figures 1 and 3, the cabinet 34 has a frame and a front face which includes the cross bar 32. The front face defines an opening 46 through which the drawer 22 passes as it moves forward and backward relative to the cabinet 34. The front face and its cross bar 32 have a front-to-back depth, and the trough 30 on the latch
10 10 is deep enough to receive the cross bar 32. The drawer 22 has left and right sides 23, 25 and a bottom 27.

 The safety latch 10 is mounted inside of the drawer 22 such that the outside face 16 of the vertical leg 12 of the safety latch 10 lies against the inside surface 42 of the left side 23 of the drawer 22. The protective sheet 24 has been peeled off of the outside face 16, allowing the vertical leg 12 to be adhered to the side 23 of the drawer 22. To
15 facilitate the installation, the safety latch 10 is mounted such that the upper surface 18 of the vertical leg 12 is parallel to, and flush with, the upper edge 44 of the side 23 of the drawer 22.

 As seen in Figure 8, as the drawer 22 is first opened, the cross bar 32 portion of the front face of the cabinet 34 bears down on the front ramp 26 of the engaging arm
20 20. The ramp 26 rides along the cross bar 32, flexing the engaging arm 20 further and further downwardly as the drawer 22 is pulled out, until the trough 30 reaches the cross

bar 32. At that point, the engaging arm 20 snaps back and receives the cross bar 32 within the trough 30 (as seen in Figure 3). Now, the rear vertical surface of the trough 30 abuts the rear surface of the cross bar 32, preventing any forward movement of the drawer 22, and the front vertical surface of the trough 30 abuts the front surface of the cross bar 32, preventing rearward movement of the drawer 22. Thus, in this position, the latch 10 prevents the drawer 22 from moving inwardly or outwardly.

In order to open or close the drawer 22 from the position shown in Figure 3, the user pushes down on the front ramp 26 of the safety latch 10 until the respective ramp 26 or 28 clears the bottom 46 of the cross bar 32, and then, while the safety latch 10 is in this downwardly deflected position, the user pulls or pushes on the drawer 22 to further open or close the drawer 22.

If the drawer 22 is opened, so that the entire latch 10 is forward of the cross bar 32, then, as the drawer 22 is pushed closed, the cross bar 32 bears down on the rear ramp 28, again causing the engaging arm 20 to flex downwardly. Again, as soon as the drawer 22 is closed enough that the trough 30 reaches the cross bar 32 (as seen in Figure 3), the engaging arm 20 snaps back up to receive the cross bar 32 within the trough 30, preventing any further movement of the drawer 22 in the forward or rearward direction. Once again, the user pushes down on the front of the engaging arm 20 to release the cross bar 32 from the trough before opening or closing the drawer any further.

In this preferred embodiment 10, the safety latch 10 is made as a single piece

from a strong and flexible material, such as plastic, such that the engaging arm 20 may be readily deflected downwardly when acted upon by either the cross bar 32 or by the user, and such that it also will snap back upwardly when it is released.

The safety latch 10 may typically be installed as close as possible to the front
5 face of the drawer 22 such that the drawer 22 opens just far enough for the user to be able to push down on the front ramp 26 of the safety latch 10 to disengage the engaging arm 20, but not far enough for a hand to reach into the drawer 22 and grab or pull out any of its contents. The distance between the front face of the drawer and the front face
10 of the cabinet when the latch is latched, as shown in Figure 3, should be great enough that a child's fingers will not be pinched between the drawer and the cabinet when the drawer is in the latched position.

The embodiment described above shows a simple and effective arrangement for providing a safety latch for a drawer which prevents a child from getting access to the contents of the drawer and prevents the child from pinching his fingers in the drawer. It
15 will be obvious to those skilled in the art that modifications may be made to the embodiment described above without departing from the scope of the present invention.